UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,380	04/20/2004	Joe Keirouz	069110.0161	4822

5073 7590 09/18/2007		EXAMINER
BAKER BOTTS L.L.P.		LEE, BETTY E
2001 ROSS AVENUE		

ART UNIT	PAPER NUMBER
2616	

SUITE 600
DALLAS, TX 75201-2980

NOTIFICATION DATE	DELIVERY MODE
09/18/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com
glenda.orrantia@bakerbotts.com

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>20 April 2004</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,2,5-11 and 15-20</u> is/are rejected.

7) ☒ Claim(s) <u>3,4 and 12-14</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>20 April 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims **11-15** are objected to because of the following informalities:

Claim **11** lines 9-10 recites "storing pointers to a short cell in a short cell queue".

Since multiple pointers are being stored, it is believed that "a short cell" should be plural

and refers to "one or more short cells in line 11". It is suggested that "a short cell" be

changed to --- the short cells ---.

Claims **12-15** are objected to as being dependent on an objected base claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claims **6-10** are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 6 lines 5-7 recite "stored the long request and the short request in the long

cell queue and the short cell queue". It is unclear if the long request and the short

request are each stored in the long cell queue and the short cell queue or if the long

request is stored in the long cell queue and the short request is stored in the short cell

queue.

Claims 7-10 are rejected as being dependent on a rejected base claim.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

6.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

7.   Claims **1, 2, 11, and 16** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ono et al. (US 6,975,651) in view of Pyhalammi et al. (US 5,671,224)

and Mukuoyama et al. (US 2004/0202169).

Regarding claim 1, Ono teaches a write request control unit operable to divide a

received packet into a plurality of packet cells, the packet cells, including one or more

long cells and one or more short cells (see col. 9 lines 1-20), the write request control

unit operable to selectively pair a long cell with a short cell (see col. 9 lines 1-20; The

two partially filled cells of which one is long and one is short are paired together and

transmitted.). Ono teaches all the subject matter of the claimed invention with the

exception of an access control unit operable to store pointers to the long cells in a long

cell queue and pointers to the short cells in a short cell queue during a write cycle, the

access control unit operable to store a long cell and short cell pair into a memory in

accordance with the pointers in the long cell queue and the short cell queue.

However, Pyhalammi teaches storing long cells in a long cell queue during a

write cycle and storing the short cells in a short cell queue during a write cycle (see col.

4 lines 25-33; The cells are stored into separate buffers depending on the length/size of

the cell.). Thus, it would have been obvious to one of ordinary skill in the art to use the

system of Pyhalammi in the system of Ono. The motivation for doing so is to make the

system more efficient. Ono in view of Pyhalammi teaches all the subject matter of the

claimed invention with the exception of storing pointers to the cells in the queues and

storing the cells into a memory in accordance with the pointers.

However, Mukuoyama teaches storing pointers to the cells in the queues and storing the cells into a memory in accordance with the pointers (see paragraph 43). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Mukuoyama in the system of Ono in view of Pyhalammi. The motivation for doing so is to make the system more flexible.

Regarding claim 2, Ono further teaches the write request control unit selectively pairs a long cell with a short cell to achieve an optimized performance order (see col. 9 lines 1-20).

Regarding claim 11, Ono teaches dividing a packet into one or more packet cells, the packet cells including one or more long cells and one or more short cells (see col. 9 lines 1-20);

selectively pairing a long cell with a short cell (see col. 9 lines 1-20; The two partially filled cells of which one is long and one is short are paired together and transmitted.); and

the cells and cell pairs are stored in a queue (see Fig. 16 Box 53).

Ono teaches all the subject matter of the claimed invention with the exception of storing pointers to the long cells in a long cell queue during a write cycle; storing pointers to a short cell in a short cell queue during the write cycle; and storing the long and short cell pair into a memory in accordance with the pointers in the long cell queue and the short cell queue.

However, Pyhalammi teaches storing long cells in a long cell queue during a write cycle and storing the short cells in a short cell queue during a write cycle (see col.

4 lines 25-33; The cells are stored into separate buffers depending on the length/size of the cell.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Pyhalammi in the system of Ono. The motivation for doing so is to make the system more efficient. Ono in view of Pyhalammi teaches all the subject matter of the claimed invention with the exception of storing pointers to the cells in the queues and storing the cells into a memory in accordance with the pointers.

However, Mukuoyama teaches storing pointers to the cells in the queues and storing the cells into a memory in accordance with the pointers (see paragraph 43). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Mukuoyama in the system of Ono in view of Pyhalammi. The motivation for doing so is to make the system more flexible.

Regarding claim 16, Ono teaches a packet manager operable to divide a received packet into a plurality of packet cells, the packet cells including one or more long cells and one or more short cells (see col. 9 lines 1-20), the packet manager operable to selectively pair a long cell with a short cell (see col. 9 lines 1-20; The two partially filled cells of which one is long and one is short are paired together and transmitted.). Ono teaches all the subject matter of the claimed invention with the exception of the packet manager operable to store pointers to the long cells in a long cell queue and pointers to the short cells in a short cell queue during a write cycle, the packet manager operable to store a long cell and short cell pair in accordance with the pointers in the long cell queue and the short cell queue.

However, Pyhalammi teaches teaches storing long cells in a long cell queue during a write cycle and storing the short cells in a short cell queue during a write cycle (see col. 4 lines 25-33; The cells are stored into separate buffers depending on the length/size of the cell.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Pyhalammi in the system of Ono. The motivation for doing so is to make the system more efficient. Ono in view of Pyhalammi teaches all the subject matter of the claimed invention with the exception of storing pointers to the cells in the queues and storing the cells into a memory in accordance with the pointers.

However, Mukuoyama teaches storing pointers to the cells in the queues and storing the cells into a memory in accordance with the pointers (see paragraph 43). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Mukuoyama in the system of Ono in view of Pyhalammi. The motivation for doing so is to make the system more flexible.

8.   Claims **5 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (US 6,975,651) in view of Pyhalammi et al. (US 5,671,224) and Mukuoyama et al. (US 2004/0202169) as applied to claims 1 and 11 above, and further in view of Sindhu et al. (US 6,493,347).

Regarding claims 5 and 15, Ono in view of Pyhalammi and Mukuoyama teaches all the subject matter of the claimed invention with the exception of the long and short cell pair is stored in sequential banks of the memory. However, Sindhu teaches the long and short cell pair is stored in sequential banks of the memory (see col. 3 lines

19-24). Thus, it would have been obvious to one of ordinary skill in the art to use the

system of Sindhu in the system of Ono in view of Pyhalammi and Mukuoyama. The

motivation for doing so is to make the system more efficient.

9.   Claims **17-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ono et al. (US 6,975,651) in view of Pyhalammi et al. (US 5,671,224) and Mukuoyama

et al. (US 2004/0202169) as applied to claim 16 above, and further in view of Magill et

al. (US 7,061,865).

Regarding claim 17, Ono in view of Pyhalammi and Mukuoyama teaches all the

subject matter of the claimed invention with the exception of a packet scheduler

operable to receive packet identification information from the packet manager, the

packet scheduler operable to generate instructions to schedule transmission of the

packet for the packet manager. However, Magill teaches a packet scheduler operable

to receive packet identification information from the packet manager (see col. 7 lines 63-

67; The pointers are received from the packet manager.), the packet scheduler operable

to generate instructions to schedule transmission of the packet for the packet manager

(see col. 8 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art

to use the system of Magill in the system of Ono in view of Pyhalammi and Mukuoyama.

The motivation for doing so is to make the system more reliable.

Regarding claim 18, Ono in view of Pyhalammi and Mukuoyama teaches all the

subject matter of the claimed invention with the exception of the instructions generated

by the packet scheduler include dropping the packet as a result of congestion.

However, Magill teaches the instructions generated by the packet scheduler include dropping the packet as a result of congestion (see col. 6 lines 36-40). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Magill in the system of Ono in view of Pyhalammi and Mukuoyama. The motivation for doing so is to relieve congestion.

Regarding claim 19, Ono in view of Pyhalammi and Mukuoyama teaches all the subject matter of the claimed invention with the exception of the packet scheduler is operable to modify the packet identification information to include a time slot designation for transmission of the packet (see col. 8 lines 21-27 and col. 10 lines 60-67; The ensemble ID is modified to indicate a transmission slot.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Magill in the system of Ono in view of Pyhalammi and Mukuoyama. The motivation for doing so is to make the system more reliable.

Regarding claim 20, Ono in view of Pyhalammi and Mukuoyama teaches all the subject matter of the claimed invention with the exception of the packet manager is operable to transmit the packet at the time slot designation in accordance with the instructions generated by the packet scheduler. However, Magill teaches the packet manager is operable to transmit the packet at the time slot designation in accordance with the instructions generated by the packet scheduler (see col. 5 lines 28-31). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Magill in the system of Ono in view of Pyhalammi and Mukuoyama. The motivation for doing so is to make the system more reliable.

Allowable Subject Matter

10.   Claim **3 and 4** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11.   Claims **6-10** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12.   Claims **12-14** would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Daniel et al. (US 5,841,772) and Kothary (US 6,249,528) are all cited to show systems which are considered pertinent to the claimed invention.
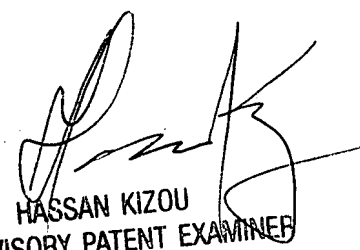
14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betty Lee whose telephone number is (571) 270-1412. The examiner can normally be reached on Monday-Thursday 9-5 EST and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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BL

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600